

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-IV Examination-Nov/Dec-2011

Subject code: 142202

Date: 28/11/2011

Subject Name: Basic Mine Surveying

Time: 02.30 pm -5.00 pm

Total marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is Theodolite? Write a note on Vernier theodolite with a neat sketch. **07**
- (b) What is Miner's dial? Explain its tests, adjustments and uses of it. **07**

- Q.2** (a) Describe the permanent adjustments of theodolite and explain how each of the adjustment is affected. **07**
- (b) The Co-ordinates of two points L and M are as under: **07**

Points	North Co-ord.	East Co-ord.
L	405.50 m	630.60 m
M	755.50 m	310.60 m

Find the length and bearing of the line LM.

OR

- (b) A dumpy level was set up at C exactly midway between two pegs A and B 100m apart. The readings on the staff when held on the pegs A and B were 2.250 and 2.025 respectively. The instrument was then moved and set up at a point D on the line of BA produced, and 20m from A. The respective staff readings on A and b were 1.875 and 1.670. Calculate the staff readings on A and B to give a horizontal line of sight. **07**

- Q.3** (a) Discuss in detail the relative merits of triangulation and precise traversing for carrying out the survey of an extensive area. **07**
- (b) Explain closing error. What is balancing? Add a note on Bowditch's method for balancing the traverse. **07**

OR

- Q.3** (a) What is Triangulation method? Give the classification of Triangulation system. **07**
- (b) What is traversing method? What are the purposes of the traverses? Add a note on precision of theodolite traversing. **07**

- Q.4** (a) What is tacheometric surveying? Under What conditions it is useful? If you are given a tacheometer, whose constants are not known, describe how you would determine them. **07**
- (b) What is Levelling? What are the principle and object of leveling? Add a note on Dumpy Level. **07**

OR

- Q.4** (a) Describe the method of determining the distance and elevations by means of a staff and theodolite. Horizontal sights are not possible in **07**

- the area. What are the advantages and disadvantages of the method?
- (b) Explain Levelling to measure the vertical and horizontal surface movements by subsidence survey. **07**

- Q.5** (a) Explain Shaft depth measurement employing a plumb wire. **07**
- (b) What are the contours? Give the characteristics and uses of contour line. **07**

OR

- Q.5** (a) Write a note on methods of interpolating contours. **07**
- (b) What are the methods of contouring? Explain Contouring on flat ground. **07**
